

FORAGE SUITABILITY GROUP

Sandy, Dry “LRU H” (AWC 3-6")

10 - 14” ppt & > 120 Freeze Free Days

FSG No.: GO61XH026WY

Major Land Resource Area (MLRA) : 61 – Black Hills Foot Slopes

Physiographic Features

This area is considered the Black Hills Foot Slopes with the majority of the area being in farms and ranches. The elevation ranges from 2,953 to 3,937 feet but may range as high as 5,577 feet (900 to 1,200m but may reach as high as 1,700m). Native grass is used mainly for livestock grazing. Some of the less sloping areas are farmed mainly to alfalfa and small grain for livestock feed. There is some Ponderosa Pine growing in the Black Hills but is marginal at best. Slopes are mostly hilly to steep with drainages being well defined.

Climatic Features

The annual precipitation ranges from 15 - 18 inches per year (375 to 450 mm per year). Most of the precipitation occurs falls during the growing season. Precipitation in the winter is mainly snow. Average snowfall is from 24 – 40 inches (60 to 100 cm).

Temperatures are subject to wide ranges, both seasonal and day to night. Sunshine is quite abundant with few days during the year without some sunshine. Because of the limited precipitation, production of cultivated crops is marginal. Most soils are moist or wet in the spring and are deficient of moisture during much of the growing season. Water for livestock comes mainly from streams, shallow wells, and springs.

This is in Land Resource Area “H”. The precipitation in this LRU is 10 to 14 inches and has a freeze free period of greater than 120 days.

There is a wide variation in freeze free days and precipitation in this MLRA. Please be sure and visit with the local field office for site specific climatic information that is available in the Field Office Technical Guide, Section I, Climatic Data, <http://www.nrcs.usda.gov/technical/efotg/> or refer to the National Water and Climate Center web page at <http://www.wcc.nrcs.usda.gov>.

Soil Interpretations

This group consists course textured soils. They can be found on nearly level to moderately steep slopes. These soils were formed in wind-laid sandy material. The sandy soils are easily worked, and have a pore-size distribution that results in poor water retention. These soils have a water holding capacity (AWC) of 3 to 6 inches in 60 inches of root depth. The permeability class is rapid.

The soil survey maps were completed for the purposes of developing plans for tracts of land and can not be used to determine the soils on or the suitability of a specific site. Consequently, small areas of significantly different soils are not identified on the maps and may occur in any map unit.

Refer to Appendix A, Forage Suitability Group Rules in Section II, of the Field Office Technical Guide, Pastureland and Hayland Interpretations for the parameters used in grouping the soils.

Soil Map Unit List

For a complete listing of soil components and what Forage Suitability Group the soil is in, refer to Appendix B, Section II of the Field Office Technical Guide, Pastureland and Hayland Interpretations.

Adapted Species List

Refer to Appendix C, Adapted Species for Forage Suitability Groups in Section II of the Field Office Technical Guide, Pastureland and Hayland Interpretations or access the electronic adapted species list at

<http://efotg.nrcs.usda.gov/references/public/WY/10->

[14 INCH PRECIPITATION ZONE ADAPTED SPECIES MATRIX 61 APPENDIX C.pdf](http://efotg.nrcs.usda.gov/references/public/WY/10-14%20INCH%20PRECIPITATION%20ZONE%20ADAPTED%20SPECIES%20MATRIX%2061%20APPENDIX%20C.pdf). Additional information concerning plant characteristics of a number of the listed species as well as individual cultivars of many of those species can be accessed on the web at <http://plants.usda.gov>.

Production Estimates

Production estimates are based on management intensity (fertility regime, irrigation water management, harvest timing, etc.) and should be considered as estimates only. The estimates should only be used for making general management recommendations. On site production information should always be used for making detailed planning and management recommendations when available.

The high forage production estimates listed below are based on dense, vigorous stands of climatically adapted, superior performing cultivars. They are properly fertilized for high yields, and pest infestations are kept below economic thresholds. Mechanical harvests are managed to maintain stand life by cutting at appropriate stages of maturity and harvest intervals. If grazed, optimum beginning and ending grazing heights are adhered to. Adequate time is allowed for plant recovery before entering winter dormancy under both uses.

The production estimates listed below represent total annual above ground plant production on an air-dry-matter basis. Production on pastures in many instances is species dependent and depends if the pasture is a single species pasture or a mixture of grass species. To convert the information below to AUM's (Animal Unit Months), multiply the pounds per acre by 35 per cent and then divide by 790 (example: assume 2,800 pounds per acre: $2,800 \times .35 \div 790 = 1\frac{1}{4}$ AUM's).

Irrigation: The expected production for grass would be from 2,000 to 4,000 pounds per acre. The expected production for legumes would range from 6 to 8 tons per acre.

Dryland: The expected production for grass would be from 300 to 800 pounds per acre. The expected production for legumes would range from 3 to 4 tons per acre.

Forage Growth Curves

LRU H

Growth Curve Number: WY0012

Growth Curve Name: Cool Season Grass

Growth Curve Description: Dryland (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 5 | 35 | 40 | 10 | 5 | 5 | 0 | 0 | 0 |

Growth Curve Number: WY0013
Growth Curve Name: Cool Season Grass
Growth Curve Description: Irrigated (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 5 | 20 | 30 | 25 | 15 | 5 | 0 | 0 | 0 |

Growth Curve Number: WY0010
Growth Curve Name: Legumes
Growth Curve Description: Irrigated (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 5 | 20 | 20 | 20 | 20 | 10 | 5 | 0 | 0 |

Growth Curve Number: WY0011
Growth Curve Name: Legumes/Cool Season Grass
Growth Curve Description: Irrigated (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 10 | 30 | 20 | 10 | 15 | 10 | 5 | 0 | 0 |

Growth Curve Number: WY0003
Growth Curve Name: Legumes
Growth Curve Description: Dryland (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 5 | 20 | 25 | 20 | 25 | 5 | 0 | 0 | 0 |

Growth Curve Number: WY0004
Growth Curve Name: Legumes/Cool Season Grass
Growth Curve Description: Dryland (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 10 | 30 | 30 | 15 | 5 | 10 | 0 | 0 | 0 |

Growth Curve Number: WY0005
Growth Curve Name: Warm Season Grass
Growth Curve Description: Dryland (10 – 14” precipitation)

Percent Production by Month

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | | 10 | 40 | 35 | 15 | | 0 | 0 | 0 |

Management

The relationship between soils, vegetation and climate on any given site is historically driven by the ability of the plants to grow and change as conditions warrant and has allowed various species to express themselves naturally. Under agronomic conditions, production-enhancing practices have altered the original limits of the biomass production. The modification of growth factors, customized selection of species and wise use of a variety of management practices have the potential to produce yields and quality far superior to those found in the native state.

These soils when in forage management system should see organic matter at a steady or a slowly climbing state. If erosion from either wind or water is a concern, the current erosion prediction tool should be used to ensure that the erosion concern is addressed properly. Refer to the pasture and hayland planting standard or the forage harvest standard in the Field Office Technical Guide, Section IV for further management information.

FSG Documentation

The sandy soils have a slight hazard to water erosion but the hazard to wind erosion is severe. When planting these soils to hay and/or pasture, special care may be required to ensure adequate residue cover after planting to reduce the amount of wind erosion.

Data References:

Agriculture Handbook 296 - Land Resource Regions and Major Land Resource Areas
Natural Resources Conservation Service, National Water and Climate Center (NWCC)
National Soil Survey Center, National Soil Information System (NASIS)
National Range and Pasture Handbook
Natural Resources Conservation Service, Field Office Technical Guide (FOTG)
Various Agriculture Research Service (ARS), Cooperative Extension Service (CES), and Natural Resources Conservation Service (NRCS) information on plant trials for adaptation and production.
"Dryland Pastures in Montana and Wyoming" Species and Cultivars, Seeding Techniques and Grazing Management, Montana State University, EB19

State Correlation:

Similar FSG's:

Similar FSG's in South Dakota would be: Sand

This site has been correlated with the following states:
SD

Forage Suitability Group Approval:

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| <u>Original Date:</u> | 8/27/02 |
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| <u>Approval Date:</u> | 7/17/03 |